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American Hoechst Corporation
Route 202-206 North • Somerville, New Jersey 08876
Telex 833-449 • Cable Hoechstus, Somerville, N.J.
Telephone (201) 231-2000

AMERICAN HOECHST
Docket # OPTS 66008B PCBs
C 5b File (ME)

64-830002

Direct dial number: 201/231-2877

September 26, 1984

Document Control Officer (TS-793)
Room 409 East Tower
Office of Toxic Substances
Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

66008B
C-5b

INFO. CONT. EPA
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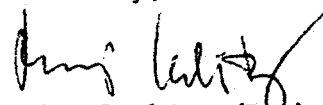
Attention: Docket No. OPTS -66008
EPA File No. ME-5 and PDE-70.5
Reference: Your letter dated 7/20/84, E. A. Klein, Director,
TSCA Assistance Office
Subject: PCB exemption
Petitioner: American Hoechst Corporation
Route 202-206 North,
Somerville, NJ 08876
Attention: Dr. Heinz Trebitz - Tel. 201-231-2877

Dear Sirs:

The attached two letters, one confidential the other not, cover our comments and petition renewal on the subject as required under 40 CFR Part 761 of July 10, 1984. We trust that this way of submission is satisfactory.

Please do not hesitate to call if there should be any question.

Sincerely,



Heinz Trebitz (Dr.)
Director
Environmental Affairs &
Product Safety

HT:md
Attachments

cc: Messrs. H. Geiss
E. Mundlos (Dr.)
P. Schunck (Dr.)

via: CERTIFIED MAIL, RETURN RECEIPT REQUESTED

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To explain and support our petition we submit the following:

A. Background

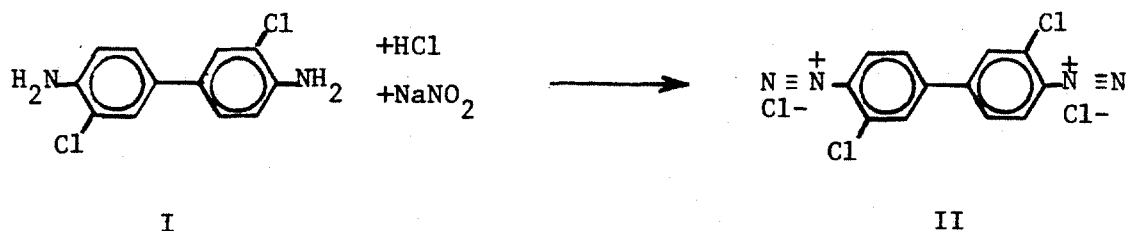
1. Products for which exemption is sought

The product for which we seek exemption is listed in the confidential section of this petition and called hereinafter Pigment A.

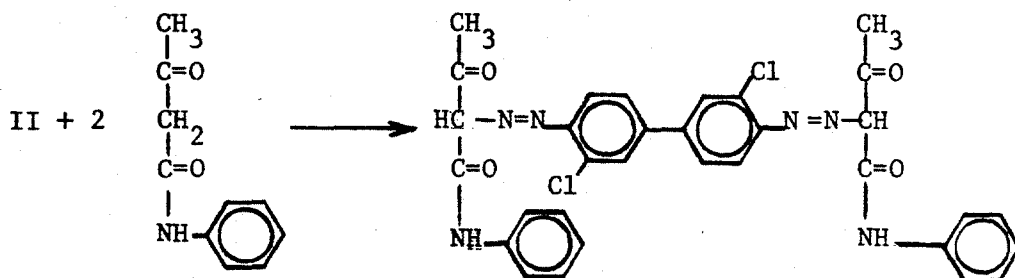
2. Description of product and its manufacture

The product is a homologue of a larger group of organic pigments, commonly known as diarylide yellow pigments which are manufactured by reactions similar to those shown below:

2.1

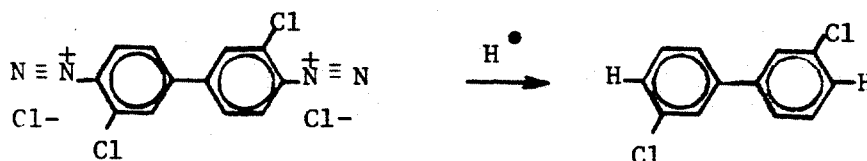


2.2



During reaction 2.1, small amounts of Dichlorobiphenyl (in this example) may be formed through heterolytic and homolytic decomposition described by the reaction:

2.3



2. Description of product and its manufacture (Continued)

2.4 Azopigments and in particular, diarylide yellows of the type described under 2.2 are imported or manufactured by batch process under closely monitored conditions at American Hoechst Corporation's Rhode Island Works facilities. Experience shows that the diarylide yellows usually contain less than 25 ppm Dichlorobiphenyl.

2.5 Pigment A for which American Hoechst Corporation is seeking exemption is being imported. It is manufactured by Hoechst AG, our parent company in Hoechst, Germany.

B. Information in support of petition renewal

1. Duration of exemption

American Hoechst Corporation is seeking a renewal for its exemption to the new 25 ppm standard for Pigment A for the duration of one (1) year.

During the last 5 years Hoechst AG, our parent company from which we import Pigment A, has conducted considerable research aimed at reducing the PCB level below 25/50 ppm and/or finding substitutes (refer to C., Research efforts).

These efforts have been partially successful. As is shown with more detail in the confidential section of this submission, PCB levels in individual batches of product A are generally only slightly above the average 25 ppm level as mandated in the final EPA regulations. Additional information available to us indicates that Pigment A manufactured at another foreign location contains smaller amounts of PCBs than so far experienced.

For these reasons we are seeking an extension of the existing exemption for at least one year after which we hope to have learned the full extent to which a PCB reduction in Pigment A is possible.

2. Concentration of PCBs and amount of PCB manufactured

The average PCB level for Pigment A is listed in the confidential section of this petition.

American Hoechst Corporation has imported since 1978 and intends during the coming years to import quantities of Pigment A as listed in the confidential section of this petition. These pigment quantities would correspond to an annual import of no more than 1.25 lbs per year of PCB.

3. Analytical method used for PCB determination

American Hoechst Corporation basically uses the DCMA [Dry Color Manufacturers' Association (Ref. 2)] validated analytical method for the determination of PCBs in diarylide pigments. For component separation after the standard extraction process, we use packed column gas chromatography (PCGC). For validation of analytical procedure we use PCGC coupled with an electron capture detector (EC) as suggested in the DCMA procedure.

American Hoechst Corporation has submitted extensive analytical data in recent comments to the agency under Docket Number OPTS-62014 (Ref. 3).

4. Release into the environment

Any PCBs present in diarylide pigments are occluded within the aggregates or strongly absorbed on the surface of the pigments. The PCBs are not easily separated from the pigments even when using vigorous analytical extraction techniques. Under normal manufacturing of organic pigments, further processing into finished products (e.g., paints or printing inks) and use of these finished products, any PCBs present in the pigment will remain occluded with the pigment in the finished product. The fact has been mentioned in previous comments by American Hoechst Corporation (Ref. 3) and DCMA (Ref 4).

4.1 Release during manufacture

American Hoechst does not intend to manufacture or process Pigment A in the US. It will rely entirely on importing the product from its foreign supplier. Accordingly there will be no release of PCB from the manufacture or processing of Pigment A at its facilities in the US.

American Hoechst, in its previous petition, has described the potential environmental releases of PCBs if Pigment A were to be manufactured or processed at its facilities in the US. Please refer to that petition (Reference 9) if such information is necessary.

4.2 Release during usage of pigment

Pigment A is used by our customers (processors, distributors) in its dry powder form. From our knowledge of some of our customer's facilities we conclude that at any handling₃ phase the OSHA mandated level for nuisance dust (10 mg/m³) is not exceeded.

4. Release into the environment (Continued)

4.3 Release as part of end product

Pigment A, for which exemption is sought, is used as a colorant in industrial paint, plastics and wallpaper. DCMA, in earlier testimonies (Ref. 5, Ref. 6) has addressed the question of PCB contents in common paint and printed matter. Plastics may contain anywhere between 0.1 and 1% of organic pigments as colorants. Thus, at a maximum level of 1% of pigment containing 50 ppm PCB, the resulting PCB content of the final plastic product would be no more than 0.5 ppm.

As pointed out under B4. of this petition this PCB is tightly bonded to the pigment matrix from which it cannot be extracted easily.

As to the pigment, American Hoechst Corporation has run FDA guideline extraction tests on polypropylene containing 0.3% of Pigment A using distilled water, 3% acetic acid and 50% ethanol as extraction solvents. Based on these tests the amount of Pigment A detected in these extractions was below the 50 ppb (parts per billion) level.

5. Risk of injury to health or the environment

5.1 General

Under 2. we have shown that the total amount of PCBs imported in Pigment A during the past years has been no more than 1.2 lbs. per year. We do not expect any significant growth of our business with Pigment A in the future. Under 4. we have addressed the question of PCB release during pigment manufacture, usage and via pigment containing end products. We believe that both aspects show that if an exemption is granted no unreasonable risk of injury to health or the environment can be expected.

5.2 Exposure/worker protection during manufacture

American Hoechst does not intend to manufacture or process Pigment A in the US. It will rely entirely on importing the product from its foreign supplier. Accordingly, there will be no release of PCB from the manufacture or processing of Pigment A at its facilities in the US.

5.2 Exposure/worker protection during manufacture (Cont'd)

American Hoechst, in its previous petition, has described the potential exposure of workers and their protection against it if Pigment A were to be manufactured or processed at its facilities in the US. Please refer to that petition (Reference 9) if such information is necessary.

5.3 Exposure during usage of pigment

Although we have only limited knowledge of the actual workplace conditions at our customer's facilities we assume that at any handling phase the OSHA mandated level for nuisance dust (10 mg/m^3) is not exceeded. An example for potential PCB intake at that level is given below. Through Material Safety Data Sheets and personal discussions with the customer American Hoechst Corporation is stressing the importance of worker protection by use of adequate equipment and protective clothing.

To quantify potential PCB intake with Pigment A *) we are repeating an example given in the submission of the Ecological and Toxicological Association of the Dyestuff Manufacturing Industry (ETAD) dated 9/30/81 (Ref. 7) on the exposure to pigment dust containing 50 ppm PCBs: At the maximum recommended levels for nuisance dust for an 8 hour day (15 mg/m^3) the level of PCBs is 750 ng/m^3 of air (and is of the same order of magnitude as is commonly found in indoor air (Ref. 8). This results in a calculated daily intake of 7.5 ug per day which is approximately the US average PCB intake in food.

5.4 Exposure to end products containing pigments

American Hoechst Corporation, in their comments under Docket Number 62014 (Ref. 3) has addressed this matter extensively. In conclusion we stated:

"American Hoechst Corporation believes that it is unlikely that human exposure from these sources will be great enough to measure. From recently published data it becomes evident that human exposure to PCBs introduced by organic pigments is certainly much less than the background concentration of PCBs to which we are exposed."

* Pigments of the diarylide yellow group are non-toxic and have LD₅₀ values of well over 5000 mg/kg body weight. Pigment A has an LD₅₀ of over 15000.

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6. Economic impact

In its previous submissions (See Ref 9), American Hoechst Corporation had addressed the economic impact of the PCB regulations affecting the diarylide pigments group of which Pigment A is a member. We had pointed out that our compliance cost in this area was exceeding one half million dollars.

Since that time (July 1982) we have incurred additional cost for the following:

Analytical Work	\$5,400
Research Efforts	\$67,800
Preparation of this petition	<u>\$1,200</u>
Total	\$74,400

7. Potential business loss

The economic impact from loss of our business with Pigment A is addressed in the confidential part of this petition.

C. Research Efforts

The cost for research efforts aimed at reducing the PCB contents in Pigment A and finding suitable substitutions has been described under point 6, above and in our prior petition (See Ref. 9).

The research efforts were mostly made at our parent company Hoechst AG, from March 1979 through July 1984 and included the following:

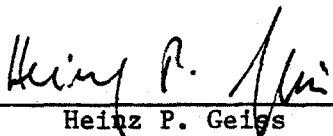
- a. Development of suitable analytical methods.
- b. Isolation and identification of non PCB contaminants in Pigment A with the aim of explaining side reactions that may generate PCBs.
- c. Isolation, identification and quantification of impurities in starting materials that might result in PCB generation.
- d. Independent synthesis of analytically found impurities for corroboration of structure.
- e. Variation of adjuvants during synthesis of Pigment A aiming at influencing the PCB generation.

C. Research Efforts (Continued)

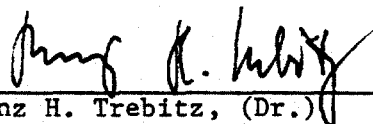
- f. Variation of physical and chemical reaction parameters during pigment synthesis.
- g. Investigation of structural influence of reaction components during pigment synthesis.
- h. Search for a substitute for Pigment A with similar coloristic and application characteristics.

D. Note on work to find a suitable substitute:

Pigment A is known for its exceptional green shade and excellent solvent fastness. No substitutes could be found that provide the same combination of these two characteristics. While the product has been replaced in some applications because of possible compromises others have maintained Pigment A as a indispensable specialty.



Heinz P. Geiss
Vice President and General Manager
Colorants and Auxiliaries



Heinz H. Trebitz, (Dr.)
Director, Environmental Affairs &
Product Safety

E. References

Ref. 1. Interim Procedural Rules for PCBs Ban Exemption, Fed. Reg. 43; No. 212 of November 1, 1978; Pages 50905-50907.

Ref. 2. An analytical procedure for the determination of polychlorinated biphenyls in dry phthalocyanine blue, phthalocyanine green and diarylide yellow pigments.

Proposed by the Dry Color Manufacturer's Association. Sent on June 24, 1981 to Charles Plost, Office of Research & Development, U.S.E.P.A. Carbon copy sent to Ruth Greenspan Bell, Esquire.

Ref. 3. Letter American Hoechst Corporation to:

Document Control Officer (TS-793)
Office of Toxic Substances
Environmental Protection Agency
Room E-401
410 M Street, SW
Washington, DC 20460

SUBJECT: COMMENTS BY AMERICAN HOECHST CORPORATION
ON ADVANCED NOTICE OF PROPOSED RULEMAKING
CONCERNING PCBs IN CONCENTRATIONS BELOW
FIFTY PART PER MILLION

DOCKET NUMBER OPTS-62014

Ref. 4. Letter Cleary, Gottlieb, Steen & Hamilton on behalf of Dry Color Manufacturers' Association to:

RUTH GREENSPAN BELL, ESQUIRE
ACTING ASSOCIATE GENERAL COUNSEL
TOXIC SUBSTANCES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY (A-132T)
ROOM 515 WEST TOWER
401 M STREET, SW
WASHINGTON, DC 20460

SUBJECT: COMMENTS BY DCMA ON ADVANCED NOTICE OF PROPOSED
RULEMAKING PUBLISHED IN 46 FEDERAL REGISTER
27619 (MAY 20, 1981)

Ref. 5. DCMA prepared written testimony, submitted on August 30, 1978 at the EPA PCB hearing (see also transcript of proceedings of the EPA informal hearing).

Ref. 6. DCMA reply comments submitted to EPA on October 10, 1978.

Ref. 7. ETAD comments on the EPA Advance Notice of Proposed Rulemaking concerning PCBs in concentrations below 50 ppm. L6025 Document Nr. OPTS 62014, Sept. 30, 1981.

Ref. 8. Macleod
Environmental Science & Technology
1981, 8, 926-928.

Ref. 9. Docket No. OTS066001

American Hoechst Corporation's letter dated 7/15/82 to:
Document Control Officer (TS-793).
Office of Toxic Substances
Environmental Protection Agency

SUBJECT: Petition for exemption from PCB manufacturing ban.